

Appendix A

INFECTED FOOD WORKER POLICY

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1) Local Board of Health Responsibility

According to *105 CMR 590.000: Employee Health*, “No employee, while infected with a disease in a communicable form that can be transmitted by foods, or who is a carrier of organisms that can cause such a disease or while affected with a boil, infected wound, or acute respiratory infection, shall work in a food establishment in any capacity in which there is a likelihood of such person contaminating food or food-contact surfaces with pathogenic organisms or transmitting disease to other persons.”

Infected food handlers are a significant contributing factor in foodborne illness outbreaks. Fecal-oral transmission by food workers with gastrointestinal symptoms such as nausea, cramps, vomiting and diarrhea is possible since they shed the pathogen during illness as well as after symptoms disappear. Infected skin lesions on food handlers may also be reservoirs of pathogens, such as *Staphylococcus aureus*, which can be transmitted to food when there is direct contact between the food and the infected lesion.

When a local health department receives a report of a food worker who is a carrier of a suspected or confirmed communicable disease that can be spread through food, it should be investigated immediately. The key to effective intervention is timeliness. Precautionary actions, specific to the disease agent involved, must be taken, and in some cases, rapid public notification must also be implemented.

2) Definition of a Food Worker

A food worker is any person directly preparing or handling food. This could include the owner, individual having supervisory or management duties, other person on the payroll, family member, volunteer, person performing work under contract, or any other person working in a foodhandling facility. In health care facilities, this includes those who setup trays for patients to eat, feed or assist patients in eating, give oral medications or give mouth/denture care. In day care facilities, schools, and community residential programs, this includes those who prepare food for clients to eat, feed or assist clients in eating, or give oral medications.

3) What To Do If You Discover A Sick Food Worker?

a. Confirm the Illness. Whenever a food worker is reported to have a disease capable of being spread through food, the diagnosis and/or symptomatology should be confirmed immediately.

If the initial report is received from a health care provider, confirmatory laboratory tests from an approved laboratory should be requested. If laboratory tests are negative for common enteric pathogens (i.e., salmonella, shigella, campylobacter, giardia, cryptosporidium, *E. coli* O157:H7), symptoms should be confirmed by the health care provider and be compatible with a communicable enteric illness.

If the initial report is received from a qualified laboratory, health care provider confirmation is not necessary to proceed with the implementation of public health measures (see steps below).

NOTE: If the illness is a reportable disease, complete the appropriate MDPH *case report form*. More information on reportable diseases and *case report forms* can be found in Chapter 4, Section 4-B.

b. Exclude the Food Worker. Restriction or exclusion actions that should be taken for each specific disease or syndrome are outlined in: Section 3 of this appendix, *105 CMR 590:000 Minimum Sanitation Standards For Food Establishments* and *105 CMR 300: Reportable Diseases and Isolation and Quarantine Requirements*. An excluded food worker may return to work when the criteria prescribed in *105 CMR 590* and *105 CMR 300* are met, and when the local health officer determines that no further public health threat is posed by that individual working as a food handler.

c. Identify and Dispose of Food Contaminated by Infected Food Worker. Collect specific information about the food worker's duties and responsibilities at the food service establishment. Determine if food on the premises prepared or served by the sick food handler should be discarded based on: hygienic practices observed (poor hygiene increases the risk for disease transmission through food), foods handled, and method of preparation. Be specific as to food handled and dates on which it was handled for the entire time the food handler was symptomatic while working. (Exception: With a hepatitis A case, the person is considered to be infectious with HAV two weeks prior to onset of symptoms and up to one week after onset.)

Questions to keep in mind are:

- What dates did the employee work while he/she was symptomatic?
- What specific foods were touched by the employee's bare hands and were not subsequently cooked prior to service?
- Describe the food worker's hygienic practices.

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- Does the food worker wash his/her hands after using the bathroom?
- Does the food handler wash his/her hands as necessary during the day?
- Does the food handler use disposable gloves? If so, are they used properly?

Foods which may have become contaminated by an infected food handler should be embargoed or disposed of in accordance with *105 CMR 590.000*.

d. Interview and Educate Other Food Workers Other food handlers in the food establishment should be interviewed about their health status and, if symptomatic, excluded and referred to their health care provider. The food establishment employees should also be educated about the disease (i.e., symptoms, mode of transmission, prevention). Provide the employees with fact sheets. (Copies of the MDPH enteric disease fact sheets are provided in Appendix D.)

- Stress the importance of thorough handwashing. (An informational poster on handwashing for food workers can be found in Appendix E.)
- Stress the importance of employees not working if they are ill.
- If the establishment is using gloves, educate about the proper use of gloves.

Proper handwashing procedures

- 1) Wet hands with warm water and apply enough soap to attain a good lather.
- 2) Wash the palms and backs of your hands, wrists, between the fingers, and under the fingernails. Washing for at least 20 seconds is necessary.
- 3) Rinse thoroughly under running water.
- 4) A second handwashing would be beneficial, especially after completing a dirty job.
- 5) Dry hands with a paper towel. Use the paper towel to shut off the water.

e. Testing all Food Workers in Outbreak Situations. In an outbreak situation, especially when there are multiple foods implicated, the LBOH must provide all **symptomatic and asymptomatic** food workers with enteric kits and request them to submit stool specimens within 24-48 hours. This is to ensure the removal of a food worker who may be a continuous source of contamination. In addition, it may help to determine if infected food workers contributed to or were the cause of an outbreak. Food handlers who fail to submit stool specimens within 24-48 hours must be restricted from work until they comply. (A copy of a sample letter that can be used by the LBOH to request employee submission of stool specimens can be obtained by calling the MDPH Division of Food and Drugs at 617-983-6712.) If the LBOH coordinates stool submission to the state laboratory institute (SLI), information on how to obtain stool kits and submit stool specimens can found in Chapter 6, Section 4.

f. If Applicable, Notify the Public. When a public notice is anticipated, such as in a hepatitis A exposure, food preparation facilities and the medical community must be notified first in order to be prepared to respond. (A sample public notice is provided in

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Appendix E.) All public inquiries should be directed to the local Board of Health, the Division of Epidemiology and Immunization or the Division of Food and Drugs of the Massachusetts Department of Public Health (MDPH).

4) Specific Disease Control Measures

Disease control measures for some of the more common diseases are listed below. Please refer to *105 CMR 300.000* and *105 CMR 590.000* for a more complete listing of diseases and conditions applicable to food handlers.

Campylobacteriosis: An infected food handler may return to work once diarrhea has resolved *and* one negative stool specimen has been produced. If the food handler has been treated with an antimicrobial, the stool specimen shall not be submitted until at least 48 hours after cessation of therapy. In outbreak situations, a second consecutive negative stool specimen will be required before returning to work.

Hepatitis A: See next section, Section 5, for detailed information on hepatitis A.

Salmonellosis (excluding *S. typhi* infections, i.e., typhoid fever): An infected food handler may return to work once diarrhea has resolved *and* one negative stool specimen has been produced. If the food handler has been treated with an antimicrobial, the stool specimen shall not be submitted until at least 48 hours after cessation of therapy. In outbreak situations, a second consecutive negative stool specimen will be required before returning to work.

Salmonellosis caused by *S. typhi* (i.e., typhoid fever): An infected food handler may return to work only after producing *three negative* stool specimens, each taken at least 48 hours apart. If the food handler has been treated with an antimicrobial, the first stool specimen shall not be submitted until at least 48 hours after cessation of therapy.

Shigellosis: An infected food handler may return to work once diarrhea has resolved *and* one negative stool specimen has been produced. If the food handler has been treated with an antimicrobial, the stool specimen shall not be submitted until at least 48 hours after cessation of therapy. In outbreak situations, a second consecutive negative stool specimen will be required before returning to work.

***E. coli* O157:H7:** An infected food handler may return to work once diarrhea has resolved *and* one negative stool specimen has been produced. If the food handler has been treated with an antimicrobial, the stool specimen shall not be submitted until at least 48 hours after cessation of therapy. In outbreak situations, a second consecutive negative stool specimen will be required before returning to work.

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Skin Infections: An infected food handler may return to work after the risk of transmitting bacteria has been eliminated. Any lesions must be completely healed or be adequately covered.

Undiagnosed Diarrhea and Vomiting: Employees with diarrhea and/or vomiting may only return to work after 48 hours, but preferably 72 hours, after clinical symptoms have resolved or until a noninfectious cause has been determined.

NOTE: If you have questions regarding exclusion, contact the MDPH Division of Epidemiology and Immunization at (617) 983-6800.

5) Hepatitis A Control Measures

Reports of hepatitis A cases should be acted upon immediately. A confirmed case of hepatitis A in a food handler is a serious event and requires that risk for both co-workers and the public be assessed as quickly as possible.

Since the incubation period for hepatitis A can be as long as 50 days, a prevention measure is available for those who might have been exposed. Immune globulin (IG), if administered within 2 weeks of exposure, is 80-90% effective in preventing the illness completely or making the symptoms less severe. This is particularly important when trying to prevent further cases among co-workers of a positive food handler. The sooner IG is given the more effective it is in preventing infection. Food handlers who have previously received two doses of hepatitis A vaccine can be considered immune. These food handlers will not need to receive IG nor be restricted.

The infectious period, hygiene, work habits, foods prepared, methods of food preparation and symptoms can help to determine the likelihood that consumers were exposed to contaminated food. If the risk is considered high, based on established criteria, efforts must be made to find those consumers and advise them to be evaluated for preventive treatment (i.e., IG).

Follow the recommendations below when you receive a call regarding a suspect case of hepatitis A in a food handler.

NOTE: A MDPH *Hepatitis A Worksheet* is provided at the end of this appendix to assist local boards of health in recording pertinent information and initiating control and prevention measures. This worksheet is for LBOH use, does not need to be sent to the MDPH, and can be filed accordingly.

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a. Confirm The Case. The confirmation of hepatitis A requires serologic testing to detect antibodies against HAV (anti-HAV). The antibody response to HAV consists initially of the IgM class antibody which usually becomes detectable at the time of illness (approximately 30 days post-exposure.) Therefore, the presence of IgM is associated with active or recent HAV infection. **In order to have a confirmed case of hepatitis A, the patient must be IgM anti-HAV positive.** The appearance of the IgG class of anti-HAV follows the IgM response by several weeks. IgG antibody to HAV persists for life in most cases.

NOTE: HAV stands for hepatitis A virus.

Typically, HAV serology is performed by first testing the serum for the presence of total antibody against HAV (i.e., IgM and IgG combined). If this test is negative, no further tests need to be done on that sample. If it is positive for total HAV antibody, the serum should then be tested for IgM specifically.

Thus, three results are possible when testing for antibody against HAV:

- 1) Total antibody negative = No evidence of HAV infection = susceptible
- 2) Total antibody positive and IgM negative = Prior infection with HAV (possibly years ago) or immunized, currently immune, not an active case, not infectious
- 3) Total antibody positive and IgM positive = A case of active hepatitis A, recent infection and possibly infectious, follow-up is necessary

Occasionally, a laboratory will report a HAV serology as “IgM and IgG positive.” Although this wording can be confusing, typically, this means the specimen was total antibody positive. One should always confirm that a specific test for IgM anti-HAV was performed and that it was positive.

NOTE: Remember, if a suspect case of hepatitis A in a food handler becomes confirmed, a MDPH *Hepatitis Case Report Form* must be completed and sent to the MDPH, Division of Epidemiology and Immunization, Surveillance Program. (See Chapter 4, Section 4-B for further information on *case report forms*.)

b. Determine The Period Of Infectivity. Fecal shedding of the virus peaks during the week prior to onset of symptoms. For purposes of public health intervention, a patient should be considered to be infectious for 14 days prior to the onset of symptoms to 7 days after onset of symptoms. If symptom onset is unclear, use the date when jaundice was first

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noticed. If no symptoms were noted, the date the blood was drawn is considered the date of onset.

c. Report to the MDPH. Notify The MDPH, Division of Epidemiology and Immunization at (617) 983-6800 as soon as you hear of a suspect/confirmed hepatitis A case in a food handler.

d. Exclude The Food Worker. No case shall engage in the handling of any food until one week after onset of symptoms, providing all symptoms have subsided.

e. Inspect The Food Establishment. The food establishment inspection should involve the following:

- Focus on handwashing practices and rest room facilities, the types of foods and beverages that are served, and how these foods and beverages are handled.
- Obtain a very **careful history** of which days and shifts the infected person worked, exact duties, types of food handled, any use of disposable gloves, as well as an assessment of the employee's hygiene. Inquire about tasks performed by the infected employee during his/her infectious period which may have differed from normal job duties. Ascertain if food prepared on one shift is carried over to the next shift or to the next day. Determine if other employees eat food prepared by the index case. Ask the case whether she/he worked while symptomatic with diarrhea; if so, note the dates on which this occurred. **Ask the case if he/she is a food handler at other establishments.**
- Institute rigid handwashing and minimize bare hand contact with high risk foods. High risk foods are items which are served raw or which are handled after being cooked. Examples of high risk foods include but are not limited to:
 - lettuce, tomatoes, etc. on sandwiches that receive no further heating
 - salads, vegetables, and fruits at salad bars
 - sliced cooked foods which may be contaminated during boning or slicing procedures
 - cold cuts
 - cake icing
 - ice that is scooped by hand or with a contaminated scoop
 - condiments for drinks (olives, lime wedge, etc.)
- Ensure that the food handler is excluded from work until no longer infectious, i.e., one week after symptom onset.
- Obtain a list of all employees. Survey other employees for symptoms consistent with hepatitis A. If other employees are symptomatic, they should also be excluded from work and tested for hepatitis A.

f. Immunize Contacts with IG. Hepatitis A can be transmitted by food contaminated with feces from an infected food worker. When a food worker has a confirmed case of hepatitis A, **other food handling facility employees that worked with the infected person or had contact with the food he/she prepared, must receive immune globulin**

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(IG). IG provides temporary protection (three months) and is 80-90% effective in preventing hepatitis A if administered within 14 days after exposure to HAV. IG given more than 14 days after exposure is unlikely to prevent secondary cases of hepatitis A.

The LBOH must ensure that other employees receive IG. If an employee elects not to receive IG, the employee must be excluded from working for 28 days according to *105 CMR 300.000: Reportable Diseases and Isolation and Quarantine Requirements*. The exception to this exclusion is if documentation of HAV vaccination can be produced or serologic immunity to HAV demonstrated. Receipt of IG will not interfere with subsequent serologic tests for HAV.

g. Assess The Likelihood Of Transmission To The Patrons Of The Food Establishment.

A determination should be made whether or not there is a sufficient risk of HAV transmission to the public to warrant notification of the establishment's patrons. IG administration to patrons is usually not recommended, but should be considered if the following conditions exist:

- the infected person is directly involved in handling, without gloves, foods that will not be cooked before eaten, and
- the infected person is assessed to have less than adequate personal hygiene OR worked while symptomatic with diarrhea, and
- patrons can be identified and provided IG within 2 weeks of exposure.

In settings where repeated exposures to HAV may have occurred (e.g., institutional settings), stronger consideration of IG use may be warranted.

h. If Applicable, Notify The Public. If it is determined that patrons would benefit from IG administration (see step g above), the local health department will be involved in posting public notices, issuing press releases and/or holding press conferences to identify and inform patrons at risk. IG will be provided free-of-charge from the MDPH, but the LBOH will coordinate the administration of IG to individuals. (A sample public notice and press release can be found in Appendix E.)

i. Maintain Surveillance. The manager of the establishment should monitor employees daily for the presence of signs and symptoms of hepatitis A (nausea, vomiting, diarrhea, abdominal pain, fever and jaundice). If symptoms appear in other employees, they should be referred to their health care provider for testing and excluded from work until they test negative and symptoms have subsided. This monitoring should continue for 50 days (one incubation period) past the last day the food handler worked while infectious. The local health department should also visit the establishment during this time to confirm compliance with all recommended control measures.

j. Take Steps For Prevention. As stated in Section 3 of this appendix, the food establishment employees should be educated about the disease, its signs and symptoms and the importance of not working while ill. The education should also include the importance of good hygiene (i.e., frequent handwashing) and no bare-hand contact with

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ready to eat foods. (An informational poster on handwashing for food workers can be found in Appendix E.)

Hepatitis A Vaccine. Hepatitis A vaccination provides preexposure protection against HAV infection, and is recommended for persons who are at increased risk for infection and for any person wishing to attain immunity. The populations at increased risk for HAV infection or the adverse consequences of infection are:

- persons traveling to or working in countries that have high or intermediate endemicity of infection,
- children in communities that have high rates of hepatitis A and periodic hepatitis A outbreaks,
- men who have sex with men,
- illegal-drug users,
- persons who have occupational risk for infection,
- persons who have chronic liver disease,
- persons who have clotting-factor disorders, and
- others groups (consideration is now being given to food handlers).

More information on each of these populations is provided in “Prevention of Hepatitis A Through Active or Passive Immunization” (*MMWR*, Vol. 45, No. RR-15, December 27, 1996).

References

Bryan, Frank L. *Diseases Transmitted by Food*. U.S. Department of Health Services, Center for Disease Control, Atlanta, GA, 1982.

CDC. *Prevention of Hepatitis A Through Active or Passive Immunization*. *MMWR* 1996, Vol. 45, No. RR-15.

Department of Health and Social Services. *Hepatitis A - A Handbook for Public Health Personnel*. Wisconsin Division of Health, November 1992.

FDA, *Foodborne Pathogenic Microorganisms and Natural Toxins*, U.S. FDA Center for Food Safety and Applied Nutrition, Washington DC., 1992.

FDA, *Investigations Operations Manual*, Division of Field Investigations, Rockville MD., October 1994.

International Association of Milk, Food and Environmental Sanitarians, *Procedures to Investigate Foodborne Illness, Fourth Edition*, Iowa: IAMFES, Inc., 1987.

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Massachusetts Department of Public Health. *Regulation 105 CMR 300.000: Reportable Diseases and Isolation and Quarantine Requirements*, Massachusetts Department of Public Health, July 1994.

Massachusetts Department of Public Health. *Regulation 105 CMR 590.000: Minimum Sanitation Standards for Food Establishments - Article X*, Massachusetts Department of Public Health, April 1994.

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WORKSHEET (THIS IS NOT A CASE REPORT FORM)

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

DIVISION OF EPIDEMIOLOGY AND IMMUNIZATION (617) 983-6800

FAX (617) 983-6813

Person Completing the Form: _____ Date/Time: _____

Name of Person Reporting: _____ Phone: (____) _____

Affiliation of Person Reporting: _____

I. Case Information

IgM result: _____ (date)

IgG result: _____ (date)

Symptom Onset Date: _____

(if specific onset is unknown, use date of blood draw, see pg. 2)

*****Laboratory results must confirm antiHAV IgM+ to proceed with case investigation*****

Name	Date of birth/age	Sex	Race/Ethnicity
Address	City		
Parents'/guardians' names (if applicable)	Phone number ()		
Occupation (if student, specify grade or daycare)	Name and Address of Place of Employment/School/Daycare		
Contact name and phone for place of employment/school/daycare		Medical Record Number	
Was Local Board of Health Notified? Y N BOH Contact Name and Phone Number:			

II. Clinical Information

Physician's name/phone number: _____ () _____

Was the case hospitalized? Y N Name of hospital: _____

Diarrhea: YES NO

Other Symptoms: _____

Determining "Period of Infectivity"

Fecal shedding of the virus peaks during the week prior to onset of symptoms. For purposes of public health intervention, a patient should be considered to be infectious for 14 days prior to the onset of symptoms to 7 days after onset of symptoms. If symptom onset is unclear, use the date when jaundice was first noted. If no symptoms were noted, the date the blood was drawn is considered the date of onset.

Symptom onset date: ____/____/____

Period of Infectivity: ____/____/____ to ____/____/____
(two weeks prior to sx. onset) (one week after sx. onset)

III. Work History

NOTE: Because hepatitis A transmission is through the fecal - oral route, it is very important to determine whether the case is a food worker. A food worker is any person directly preparing or handling food. A food worker may also include those who feed or assist others in eating, give oral medications or give mouth/dental care. This includes health care workers, daycare providers and dental hygienists.

1) **During the period of infectivity (see above) has the case worked or volunteered at any of the following:**

Daycare Center	_____	Dates worked: _____
Food Service Industry	_____	Dates worked: _____
Guesthouse/Inn/ B& B	_____	Dates worked: _____
Bartender	_____	Dates worked: _____
Patient Care	_____	Dates worked: _____
Baby-sitting	_____	Dates worked: _____

NOTES: _____

2) **If yes was answered to any of the above, please answer the following questions:**

a. While working in the above position(s), did the case prepare/serve/ or handle foods, assist others in eating, or give oral medications? **Y N**

b. If foods were prepared/handled/served, were they foods that would not be cooked before being eaten? **Y N**
Please list all foods prepared/handled/served (eg. salads, ice cream, sandwiches):

_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

c. While working in the above position(s), did the case have bare hand contact with foods or medications. In other words, were there times when the case did not wear protective gloves or use serving utensils? **Y N**

IV. Control Measures

Control measures are implemented through the administration of immune globulin (IG) to individuals who have been in “contact” (see definition below) with a case during the “period of infectivity” (see definition pg. 2). IG should be initiated as soon as possible after exposure and is 80-90% effective in preventing hepatitis A if administered within 14 days. Food workers, co-workers of food workers, and other contacts who are food workers must follow special control measures according to **105 CMR 300.000: Reportable Diseases and Isolation and Quarantine Regulations** (see “food worker control measures” below).

Note: IG is provided by the MDPH. If large numbers of individuals require prophylaxis, please call the Division of Epidemiology and Immunization (617-983-6800) to arrange the shipment of IG. Coordination of the administration of IG will be the responsibility of the local health department.

How to Define a “Contact”

“Contacts” include:

- **all household members**
- sexual contacts during the period of infectivity
- anyone sharing food or eating or drinking utensils with a case during the period of infectivity
- anyone consuming ready to eat foods (foods that are not cooked between when they are handled by the food worker and when they are eaten) prepared by an infected food worker with diarrhea during the period of infectivity

“Food Worker Control Measures”

If a food worker is a confirmed case of hepatitis A, all other foodhandling employees in the facility must receive IG within two weeks of exposure. Unless the foodhandling facility employee contacts can produce documentation of HAV vaccination or can show serologic immunity to HAV, they must be excluded from work for 28 days if they do not receive IG within 2 weeks. The same exclusion criteria apply to *any* foodhandling “contacts” of *any* confirmed case.

“Daycare Control Measures”

If a daycare student or staff member is diagnosed as a hepatitis A case, please refer to the MA *Health and Safety in Child Care* manual for control guidelines. Exclusion requirements and examples of parental notification letters are included in this document.

NOTES:

V. Other Control Considerations

Surveillance

The incubation period for hepatitis A is 15-50 days with an average of one month. Because fecal shedding of the virus occurs for up to several weeks before antibodies can be detected in the blood, **it is not recommended** that serologic testing be performed prior to administration of IG for contacts of a case. Contacts should be monitored for a period of 50 days (one incubation period) for symptoms compatible with hepatitis A.

Surveillance Timeframe: ____/____/____
(50 days after last day of contact with an infectious case)

Public Notification

If the case is a food worker who worked while infectious, a determination will be made by the MDPH and the local health department as to whether or not the risk to the public is sufficient enough to warrant public notification. Please call the Division of Epidemiology and Immunization at 617-983-6800.

1. During the period of infectivity, did the case directly handle, without gloves, foods that were not cooked before they were eaten?
Y N
2. During the period of infectivity, did the case have diarrhea while working? Y N
3. Can the public be given IG within 2 weeks of exposure? Y N

Period of Public Exposure: ____/____/____ to ____/____/____
(can be specific days or up to two week period of infectivity)

Last date public can receive IG: ____/____/____
(two weeks after last date of exposure)

NOTES: _____

NOTE: Hepatitis A is a reportable disease. Please report all cases of hepatitis A via the viral hepatitis case report form. Please report within 24 hours all confirmed or suspect cases in food workers to the MDPH Division of Epidemiology and Immunization at 617-983-6800.